

# *Journey* and the Semiotics of Meaningful Play

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## Abstract

The term “meaningful play” had entered the gaming vernacular in recent years, particularly in conjunction with independently developed (“indie”) videogames, but little to no consensus still exists among scholars and gamers as to what exactly makes an act of play “meaningful”. In order to approach this question from a scientific and analytical perspective, the present study borrows the methodology and concepts of semiotics, the formal study of signs and meaning-making, and applies them to *Journey*, a popular videogame lauded by critics for facilitating meaningful player experiences.

The study builds upon the ludic framework, a semiotic theory of meaningful gameplay currently in development by the French videogame researcher Frederic Seraphine, and consists of two parts. First, we give a brief overview of the three key theories underlying Seraphine’s work (the semiotic studies of Charles Peirce and his students, the cybertextual studies originating with Espen Aarseth, and the Mechanics-Dynamics-Aesthetics framework), before examining the ludic framework itself in detail. We then analyze the production background and history of *Journey* and perform a semiotic analysis of select elements of its visuals, mechanics, and levels in an attempt to better understand its way of creating meaningful player experience. Finally, we draw conclusions both about the applicability of semiotic analysis to contemporary games and about the question of meaningful play itself.

**Keywords:** Game studies, semiotics, emotion, gameplay, narrative, ergodic literature, cybertext, MDA framework, ludic framework, thatgamecompany

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## 1 Peircean semiotics

Charles Sanders Peirce (1839–1914) was an American scientist and philosopher who made contributions to a wide range of disciplines, from logic and mathematics to philosophy, psychology, and linguistics. Today, he is perhaps best remembered as the founding father of the philosophical tradition of pragmatism and, along with the Swiss linguist Ferdinand de Saussure (1857–1913), of semiotics<sup>1</sup> – the formal study of signs, sign processes (semiosis), and meaning-making.

### 1.1 Category theory

As Helmut Pape [25, p. 118] points out, the semiotic doctrine of Charles Peirce is deeply rooted in his own category theory. Examining Kant’s twelve categories, Peirce found himself able to reduce the number of categories needed to classify any existing or possible phenomenon down to just three. While he did not document the exact logical procedure he had used, the end result of his line of thought were following categories, distinguished by their *valence*, or the number of the phenomenon’s relations to objects and other phenomena:

1. **Firstness**, also referred as “quality”, is a category of monadic relations, which contains abstract phenomena that exist without relation to anything but themselves. This category is populated by qualities and ideas; colors are a popular example of the firstness.
2. **Secondness**, also referred as “reaction”, is a category of dyadic relations, which contains specific things that only exist in relation to something else. This category is populated by facts, events, and propositions.
3. **Thirdness**, also referred as “mediation”, is a category of triadic relations, wherein something mediates between two others or represents one thing to another. This category contains, according to Peirce, all signs, as well as habits and laws.

Peirce argued that triadic relations were necessary and sufficient to explain all human cognition [25, p. 40], and that all higher-order relations could be reduced to triads. As Daniel Chandler observes, he was “clearly fascinated by tripartite structures” [11], while Robert Beeson cites Peirce’s critics who had accused him of “triadomania” [4, p. 103].

### 1.2 Theory of signs

The most common phrasing of Peirce’s definition of signs found in semiotic literature is: “A sign... is something which stands to somebody for something in some respect or capacity. It addresses somebody, that is, creates in the mind of that person an equivalent sign, or perhaps a more developed sign” [11]. It is evident from this definition that Peirce viewed signs as much more abstract and universal than the everyday understanding of the term entails. He had, in fact, claimed that “[all] thinking is by signs” and that “this universe is perfused with signs, if it is not composed exclusively of signs” (as cited in [4, pp. 5–6]).

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<sup>1</sup>Robert Beeson [4, p. 118] stresses that Peirce had never used the term “semiotics” in his writings, instead preferring the term “semeiotic” for the discipline he had pioneered. For this interdisciplinary study, however, the more common modern spelling will be used outside of direct quotations.

**Sign structure.** Peirce viewed signs as the main exemplar of the thirdness, that is, of triadic relations, wherein something (the *representamen*) mediates between a referent object and something else (the *interpretant*) in such a way, that the *interpretant* is, itself, a *representamen* for the object and can therefore mediate between it and a new *interpretant*, and so on. Peirce believed this process, the *semiosis* (sense-making, inference), to be endless, because there is no theoretical limit on how many successive *interpretants* a single sign can thus produce.

A simple illustration of this process would be a spoken word (*representamen*) conjuring a mental image (*interpretant*) of the object it refers to in the mind of the hearer. The hearer can then use that mental image (as *representamen*) to create a drawing (new *interpretant*) of that object, and so on. The tripartite structure of a sign, according to Peirce, is thus as follows:

1. The *representamen* (often confusingly referred simply as “sign” in Peirce’s original writings; Chandler instead suggests the term *sign vehicle* to distinguish them [11]) is that which stands, i.e. is interpreted, as a sign.
2. The (semiotic) object is that which the sign stands for. Peirce’s later writings further distinguish between “immediate” and “dynamic” objects:

The *immediate object* is the object “as the sign represents it” [4, p. 120].

The *dynamic object* is the object as it is, i.e. the underlying reality of the object. With this, Peirce draws attention to the fact that the ways signs represent their objects are not always complete or exclusive, explaining such phenomena as misdirection and misrepresentation.

3. The *interpretant* (not to be confused with the interpreter, which is a mind or a *quasi-mind* [4, p. 245] to whom the meaning is conveyed) is that which is linked to the semiotic object by the representamen in the same way that the representamen itself is linked to it, completing the semiosis. Peirce distinguishes between three types of interpretants:

The *immediate interpretant* is the meaning derived by the interpreter immediately and exclusively from the sign.

The *dynamic interpretant* is the effect the sign produces in the interpreter’s mind within a number of inference cycles that is considered normal or customarily acceptable in the current cultural context (i.e. without “overthinking it”).

The *final interpretant* is the effect the sign would have had on the interpreter’s mind, if the chain of semiotic inferences were followed to its ultimate logical conclusion.

**Classification of signs.** In addition to outlining a tripartite generic structure of the sign, Peirce created a taxonomy of signs based on three aspects, each containing three subcategories. The first trichotomy concerns the representamen, specifically, what exactly stands as a sign:

1. **Qualisign** (shortened from “qualitative sign”) is a quality or a possibility.
2. **Sinsign** (from “single sign”) is an actual thing, a fact, an event, etc.
3. **Legisign** (from the Latin *lex* or “law”) is a law or a habit. Legisigns manifest themselves exclusively through their instances or replicas, i.e. sinsigns derived from them.

It is not difficult to see how Peirce’s omnipresent category theory factors into this and other trichotomies of his taxonomy. The second trichotomy concerns how exactly the representamen stands for its (dynamic) object, and is perhaps the best-known of Peirce’s classifications:

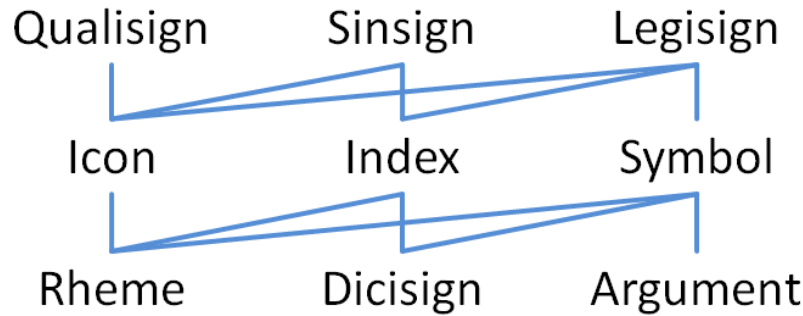


Figure 1.1: Peirce's classification of signs (adapted from [25, p. 130]).

1. An **icon** stands for its object by sharing some qualities with it, i.e. through similarity.
2. An **index** stands for its object by having a direct connection to it. The most common such connection is a causal relationship, e.g. a smoke standing for a fire that produced it.
3. A **symbol** stands for its object by the virtue of habit or law. Almost all natural language is essentially symbolic.

The final trichotomy concerns how the sign translates to its interpretant:

1. The interpretant of a **rheme** refers to a quality or a possibility.
2. The interpretant of a **dicisign** (from Latin *dicent*) refers to a particular thing, event, proposition, etc.
3. The interpretant of an **argument** refers to a general rule or law.

Each sign, according to Peirce, can be mapped onto each of the three trichotomies. Fortunately, not all combinations of trichotomies make sense: for example, every argument, by definition, must be both a legisign and a symbol. Peirce had named ten specific sign classes, which are depicted graphically in figure 1.1.

### 1.3 Semiotics of emotion

Although Peirce had displayed uncharacteristically consistent views on emotion throughout his work (unlike on many other subjects, which shifted in his mind over the years), he had never written them down in a complete and organized fashion. It therefore fell to researchers like David Savan [28] and Robert Beeson [4] to compile his fragmented notes into a coherent whole. The following section presents a brief summary of Savan and Beeson's findings.

The key point consistently made by Peirce on the topic of emotion was that, like all cognitive functions, emotions are triadic signs, and emotionality therefore is structurally identical to abductive reasoning (hypothesizing, i.e. inferring a simple general rule from one or more sample experiences through guesswork). He did, however, eventually concede that emotion is not fully reducible to cognition because it does not follow the rules of valid inference like logical thinking does, thus representing a separate, albeit related class of cognitive phenomena (signs). At different points, according to Beeson, Peirce had identified three essential aspects of emotions: the explanatory, the affective, and the normative.

**Explanatory nature of emotion.** In Peirce’s thinking, there is a clear difference between feelings and emotions, in that the former are an example of the firstness (although specific feeling events bounded in time belong to the secondness) and the latter, of the thirdness. To him, emotion was a sort of “coping mechanism” [4, p.154] to deal with cognitive overload in a non-logical fashion. It arises when the mind is presented with “the indescribable, the ineffable, the incomprehensible” [*ibid.*] and, rather than following the inference chain to a logical conclusion (the final interpretant), falls back to a radically simplified emotional predicate.

**Affective nature of emotion.** While his main focus had always been on cognition, Peirce conceded early on that rather than only conveying ideas, emotions are characterized by an “affective expression” [4, p.155]. Savan understood *affect* specifically as “that variation in intensity of arousal and agitation that is manifested both by involuntary physiological changes and by larger movements of approach and withdrawal”. Beeson connected this definition to the “fight-or-flight” response [4, p. 296], which modern neuroscience associates with the sympathetic nervous system, whose functions lie beyond a person’s conscious control. As Peirce points out, emotion is similar to doubt in how it cannot be consciously willed into existence, but requires a trigger external to the mind.

**Normative nature of emotion.** As both Savan and Beeson indicate, Peirce had never viewed emotions as value-neutral. To him, emotions are always evaluated as “being good or bad”, as well as “appropriate or inappropriate, justified or unjustified” [*ibid.*]. In this, they can function as heuristics guiding the behavior of sign-interpreters in complex environments in addition to and, at times, even superseding logically inferred conduct. Based around the normative aspect of emotion, Savan reconstructed from Peirce’s writings an additional taxonomy of emotional categories [28, p. 330]:

1. **Natural emotions** are universal and innate, expressed by animals and human infants alike without any learning process. They mostly concern the natural functions of self-preservation and procreation: fear, rage, joy of warm contact, grief over loss, etc. Savan argues that these emotions are monadic (rhematic) in nature, as, although triggered by an external event, they are not directed at another sign-interpreter as the next category is.
2. **Moral emotions** are learned through experience or moral training. The difference between natural and moral emotions is that between “affection and benevolence, disgust and contempt, fear and guilt, joy and pride” [*ibid.*]. Savan argues that moral emotions are, on one hand, culture-specific and thus cannot be universal, and on the other, always directed at another person who can affect it. They are therefore dyadic relations, or dicisigns.
3. **Sentiments** are “enduring and ordered systems of emotions, attached either to a person, an institution, or, in Peirce’s case, a method” [28, p.331]. As an example, Savan points out that love covers a spectrum of natural and moral emotions, including, among others: “anger, joy, jealousy, sorrow, euphoria, embarrassment, disappointment, and contentment” [*ibid.*]. Sentiments serve to normalize and to structure the communal being of individuals.

## 2 Ergodic literature and cybertext

When Espen Aarseth first introduced the concepts of *ergodic literature* and *cybertext* [1], they had radically expanded the traditional notions of text, providing a unified model of textuality that brought together a wide spectrum of cultural artifacts, from traditional (sequential)

literature and the oldest interactive texts like *I Ching*, to the then-modern digital hypertext storytelling and text-based adventure games and multi-user dungeons (MUDs). Although hypertext storytelling had never recovered after its original boom of the early 1990s [18], while text games and MUDs had since been supplanted by graphical point-and-click adventures and massively multiplayer online games (MMOs), Aarseth's analysis of textuality remains relevant to this day, because many of his findings are readily transferable onto non-textual sign-producing systems, such as contemporary videogames.

**Definition of text.** Aarseth based his model on a definition of *text* as “any object with the primary function to relay verbal information” [1, p.62]. He then went on to elaborate two important implications: that a text cannot be operated independently of a physical medium and that a text is not identical to the information it transmits. “Information” here refers to a string of semiotic signs that may or may not make sense to a given observer (interpreter).

Except for a small addendum, Aarseth's definition still holds for contemporary videogames. Because he mainly examined works composed in natural languages, his definition only entails *verbal* information, leaving it unsuited for the discussion of contemporary videogames, which also rely on non-verbal, but still intelligible signs to convey their meaning. To which degree, if any, the term “text” still applies to systems that relay their meaning via non-verbal or even non-symbolic (i.e. iconic or indexial) signs may be debated, but for the purposes of this study, we shall relax the requirement of “verbal information” to “humanly cognizable information” and continue to use the term “text” to avoid the need for further neologisms.

**Constituents of text.** With his definition of text, Aarseth proceeded to identify three of its key constituents:

- **Textons** are the most basic building blocks of text, “strings [of signs] as they exist in the text” [*ibid.*]. In videogames, textons are colloquially referred as *content*.
- **Scriptons** are strings of signs “as they appear to readers” [*ibid.*]. Scriptons are composed of textons or smaller scriptons.
- **Traversal function** is “the mechanism by which scriptons are revealed or generated from textons and presented to the user of the text” [*ibid.*].

Textons and scriptons are indistinguishable and interchangeable in traditional linear literature, because its traversal function is trivial: “revealing” the next scripton (such as a page, a paragraph, or a sentence, however granularly one may want to define it) simply entails following their sequence until the end. With less trivial transition functions, the distinction becomes obvious, however. In a “choose your own adventure” book, for example, the textons are the individual pages, a scripton may be a single reading from the first page to a page marked as an ending, while the traversal function entails the reader picking one of the actions available to the main characters at the end of each page, then turning over to the corresponding next page specified in that action's description.

**Typology of text.** Having defined the constituent parts of text, Aarseth went on to outline a preliminary typology of texts according to how they are traversed:

1. *Dynamics* describe the intrinsic variability of text: in static texts, both scriptons and textons do not change, while dynamic ones may keep the textons static but allow them

to be chained into dynamic scriptons (intertextonic dynamics), or the textons may be variable, as well (textonic dynamics). Videogames usually feature intertextonic dynamics, with content modification (“modding”) tools occasionally permitting textonic ones, as well.

2. *Determinability* denotes whether the traversal function is deterministic or randomized. Most contemporary videogames feature a mixture of both approaches.
3. *Transience* describes whether or not new scriptons are presented without the user having to interact with the text. In videogames, this very roughly corresponds to the distinction between real-time (transient) and turn-based (intransient) gameplay.
4. *Perspective* describes whether the text represents its user as part of the narration (personal perspective) or treats them exclusively as an external observer (impersonal).
5. *Access* denotes whether all textons can be freely accessible to the user at any time (random access) or not (controlled access). Outside of modding tools, most games feature controlled access to their content.
6. *Linking* describes how hyperlinks between scriptons are defined: explicit, conditional, or non-existent.
7. *User functions* (UF) are perhaps the most essential characteristic of the typology. This property defines *affordances* or ways in which the user can interact with the text, with each higher function entailing the lower ones:

The *interpretative* function affords the user to traverse and to interpret the text and is inherent in the definition of the latter.

The *explorative* function affords the user to pick the order in which to traverse the static text.

The *configurative* function affords the user to choose or even to create new scriptons out of existing textons.

The *textonic* function affords the user to permanently add or to remove textons and traversal functions to the text.

Using this typology, Aarseth classified 23 selected texts and applied methods of statistical analysis to them in order to identify the features most commonly observed together. The result were four medium-independent feature clusters, which he identified as “static texts” (static, random access, no links, interpretative UF), “hypertexts” (static, random access, explicit links, explorative UF), “adventure games” (dynamic, controlled access, conditional links, explorative UF), and “unpredictable texts” (dynamic, indeterministic, transient, configurative or textonic UF; e.g. MUDs and text generators) and went on to analyze in detail [1, p. 73].

**Ergodic literature and cybertext.** Aarseth defined *ergodic literature* as one where “non-trivial effort is required to allow the reader to traverse the text” [1, p. 1]. The term “ergodic” is a neologism stemming from the Greek words *ergon* and *hodos*, meaning “work” and “path”. A trivial effort for traversal in this sense is, for instance, eye movement and turning of the pages. In terms of the above typology, ergodic literature consists of all texts that require the user to peruse functions other than the interpretative in order to traverse them.

*Cybertext* is defined as a subset of ergodic literature where the user can introduce new meaning to or modify the existing ones in the text, in other words, “a cybertext must contain



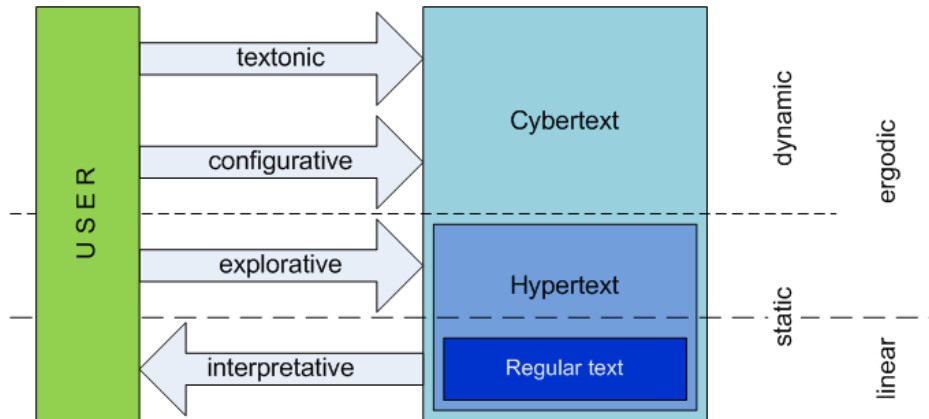


Figure 2.1: User functions and their relation to other aspects of textuality (adapted from [1, p. 64]).

some information feedback loop” [ibid., p. 19]. The etymology is derived from *cybernetics*, defined by Norbert Wiener as “the scientific study of control and communication in the animal and the machine” [38]. A cybertext is cybernetic in that it facilitates an information feedback loop between the human reader and the “textual machine” [1, p. 21]; a text does not, however, need to be mediated digitally to conform with the definition of cybertext – only to “involve calculation in [its] production of scriptons” [ibid., p. 75]. In terms of the above typology, cybertexts are texts that allow the user to peruse configurative or textonic functions. The relation of user functions to specific forms of ergodic literature are shown graphically in figure 2.1, with the arrows indicating the direction of the information flow.

### 3 MDA framework

The Mechanics-Dynamics-Aesthetics (MDA) framework was presented by Robin Hunicke, Marc LeBlanc, and Robert Zubek at the Game Developers Conference 2004 as a formal approach to game design and research, intended to “clarify and strengthen the iterative processes of developers, scholars and researchers alike, making it easier for all parties to decompose, study and design a broad class of game designs and game artifacts” [17]. It has since become one of, if not the single most popular formal model of videogames.

The creators of the MDA model point out that while games are similar to other consumable media in that they are created by authors (designers and developers) and consumed by the users (players), this act of consumption is inherently unpredictable: at the time of its creation, the developer cannot predict with certainty the behavior of the game during actual play, as it is dependent on the behavior of the player. In order to stem this unpredictability, the paper formalizes three levels of abstraction at which game artifacts are created and consumed:

1. **Mechanics** (colloq. “game rules”) are “the particular components of the game, at the level of data representation and algorithms.”
2. **Dynamics** (colloq. “game system”) are “the run-time behavior of the mechanics acting on player inputs and each others’ outputs over time.”

3. **Aesthetics** (colloq. “game fun”) are “the desirable emotional responses evoked in the player, when she interacts with the game system.”

During development, game designers have no immediate control over the dynamics and aesthetics that emerge from their mechanics, which are their primary focus; conversely, the player’s perspective is dominated by the aesthetics. Thus, developers and players approach the game experience from different ends, necessitating the designers to examine their game from both perspectives in order to facilitate the experience they want their players to have with it.

**Aesthetics.** The paper presents a non-exhaustive list of aesthetics, previously identified by LeBlanc [22] as “Eight Kinds of Fun”: Sensation (game as sense-pleasure), Fantasy (game as make-believe), Narrative (game as drama), Challenge (game as obstacle course), Fellowship (game as social framework), Discovery (game as uncharted territory), Expression (game as self-discovery), Submission (game as pastime).<sup>2</sup>

**Mechanics.** The MDA authors define mechanics as “various actions, behaviors and control mechanisms afforded to the player within a game context” and distinguish them from “the game’s content (levels, assets and so on)”; together, these two elements “support overall gameplay dynamics”. Subsequent examples make it clear that this definition is meant to encompass all rules governing the behavior of the game, including those that do not involve the player at all.

A more nuanced and formal take on the mechanics, rooted in the paradigm of object-oriented programming, was suggested by Miguel Sicart: “game mechanics are methods invoked by agents, designed for interaction with the game state” [33], where the agents can be both human and artificially intelligent. Following Aki Järvinen [19], Sicart distinguishes them from rules, which “provide the possibility space where that interaction is possible, regulating as well the transition between states”. The *rules* constrain and shape the game state possibility space, while *mechanics* allow the player to navigate it, or, as Ian Bogost put it, “when we play videogames [...] we explore the possibility space its rules afford by manipulating the game’s controls” [5, p. 43].

Sicart further differentiates between *primary* and *secondary mechanics*: the former “can be directly applied to solving challenges that lead to the desired end state [and] are readily available, explained in the early stages of the game, and consistent throughout the game experience”, while the latter “ease the player’s interaction with the game towards reaching the end state [and] are either available occasionally or require their combination with a primary mechanic in order to be functional”. Keith Burgun [9] refers to this distinction as “core and supporting mechanisms”.

**Videogames as cybertexts.** If we accept the applicability of Aarseth’s cybertextual framework to videogames (including ones that do not primarily rely on verbal communication), it is not difficult to see how the MDA and related models map onto it. Having relaxed Aarseth’s definition of text to include non-verbal signs, we can view a videogame as a (cyber)textual machine that exists in an information feedback loop with its users (players or agents). The game’s content are its textons, which are arranged into scriptons (percepts of the current game state instantiation) according to its rules (MDA’s mechanics). Sicart’s “methods for interaction with the game state” correspond to Aarseth’s explorative and configurative user functions, while modding tools may also afford the textonic function to their users (modders).

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<sup>2</sup>Another aesthetic, Competition (game as struggle for dominance), is mentioned but not listed among the others in the paper, nor in LeBlanc’s original classification.

## 4 Ludic framework

The starting point for Frederic Seraphine’s *ludic framework* [31] of videogame analysis was the search for the most basic semiotic building blocks unique to the gaming experience. To this end, he has followed the lead of the French philosopher Gilles Deleuze, who had similarly identified the basic semiotic units of film in the 1980s.

**Multimodality in videogames.** In the context of videogames, *multimodality* refers to the use of multiple modes of communication, such as visual, auditory, textual, haptic, etc., to convey ideas and emotions to the players. Seraphine observes that the majority of semiotic processes in contemporary videogames rely on symbols and methods appropriated from traditional, non-interactive media, particularly cinema (cutscenes), literature (dialogue and flavor text), and music (soundtrack), which constitute the textonic and scriptonic content of games.

While acknowledging the importance of these elements to the gaming experience, Seraphine focuses his attention on the third component of Aarseth’s cybertextuality, the traversal function, and finds that it can also be used to convey meaning and emotion in ways impossible in non-interactive media. He proposes that various forms of interactivity comprise an entire language of games and suggests *ludics* (see below) as its basic linguistic and semiotic units. Seraphine is not alone in asserting the existence of a unique “language of games”: Mark Brown [7] has independently identified and differentiated it from other videogame communication modes in very similar terms.

**Ludics.** Seraphine proposes the term “ludics” for the basic semiotic units of interaction in videogames. Although mechanics are traditionally placed at the base of many videogames models (including the MDA framework), Seraphine criticizes this assumption for unnecessarily limiting the expressive power of interactivity. He argues that it pushes games towards rule-based, systemic interactions, while relegating non-systemic transitions, such as the ubiquitous scripted events, to the category of *exceptional mechanics* [30]. To Seraphine, ludics can be any interactions in the videogame context that can be interpreted as a sign, whether as a standalone idea, an individual interaction event, or an overarching rule. In this sense, his ludics both expand and subsume the traditional notion of mechanics.

Based on which party initiates the interaction, Seraphine suggests a threefold taxonomy of ludics, which is similar to the unrelated threefold classification of gameplay interactions (*direct control*, *mediate control*, and *indirect control*) presented by Lennart Steinke [36, pp. 221–223]. In Seraphine’s framework, ludics are subdivided into *actums*, *tactums*, and *factums*:

1. An *actum* is an “interaction-sign triggered directly by an input of the player” [31].
2. A *tactum* is “a type of sign that would appear from the contact between two game objects” [*ibid.*], whether one or both of these are controlled by the player or not.
3. A *factum* is an “interaction controlled by an input from the game state itself” [*ibid.*].

This classification reflects Seraphine’s criticism of the traditionally player-centric modeling of videogames, and reveals his view of them both as ontological virtual spaces bounded by well-defined simulation rules (such as a physics engine), and as sign-producing “sentient state machines” [30] – Peircean quasi-minds engaging the players in sign exchange and communication within those spaces (see figure 4.1). Whether this idealistic view applies to the majority of contemporary videogames is up for debate, but it helps us understand the distinction between

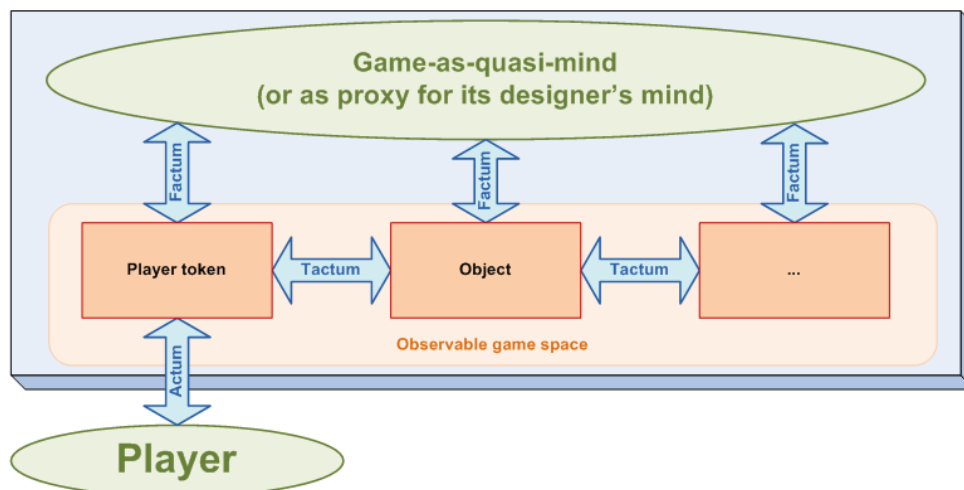


Figure 4.1: Different types of Seraphine's ludics and their positioning in videogame context.

tactums and factums: the former are governed by the rule-based simulation, while the latter are produced by the quasi-mind (referred above as the “game state”).

Seraphine's ultimate vision for videogames appears to be that of artificially intelligent, input-independent generators of player experiences, and he repeatedly stresses the importance of machine learning and artificial intelligence (AI) to the future of videogaming. In regards to a universal language of ludic signs, he also hypothesizes that its processing may be more computationally efficient than that of natural language thanks to its better-defined domain [30].

**Semiotics of ludics.** Seraphine describes ludics as *interactions-as-signs*, so his own classification is not intended to supplant Peircean trichotomies of signs, but rather to extend them. He also draws parallels between Peirce's taxonomy and the layered structure of game design:

1. Peirce's trichotomy of the representamen, i.e. qualisign/sinsign/legisign, corresponds to the *layer of the code*, where interactions are implemented and enabled as monadic signs on a technical level.
2. The trichotomy of (relation to) the object, i.e. icon/index/symbol, corresponds to the *layer of the game*, where events and interactions become interpretable as dyadic signs standing for something else.
3. The trichotomy of the interpretant, i.e. qualisign/dicisign/argument, corresponds to the *layer of play*, where interactions are actually interpreted by the players as triadic signs.

In both [30] and [31], Seraphine gives extensive examples of how various categories of Peircean signs combine with his own trichotomy of actums/tactums/factums. He pays particular attention to the *layer of play*, as it is here that complex ludic compounds, which he calls *ludophrases* [29], are constructed and interpreted as either qualisigns (decontextualized game mechanics), dicisigns (individual events and interactions), or arguments, through which players are able to infer meaning and context of gameplay interactions they experience. According to Seraphine, ludic arguments are what enables games to tell complex narratives primarily through interactions.

**Interpretation layer.** The ludic framework is positioned by its creator as both an expansion of and a successor to the MDA framework. Unlike MDA, it is bipartite rather than tripartite, with the mechanics and dynamics layers merged into a single “interpretation layer”, where the interaction (communication) between the player and the game’s quasi-mind occurs. Ludics are the basic linguistic units of this exchange and combine to form more complex ludics, like ludophrases and mechanics, which, in turn, overlap with the overall dynamics of gameplay.

An important point of distinction from MDA is that the ludics do not necessarily precede dynamics, but exist in a closed feedback loop with them. This means that the dynamics of interaction can produce new ludics, or even change the basic mechanics of the game: an example Seraphine offers is a game dynamically replacing combat mechanics with conversation trees in response to a player’s pacifist conduct.

**Aesthetic layer.** The aesthetic layer of the ludic framework also differs from its MDA counterpart by operating within the full spectrum of universal human emotions (such as joy, sadness, and anger), rather than LeBlanc’s game-specific “types of fun” [22]. Nevertheless, Seraphine agrees with Wil Wright (as cited in [15]) that videogames are better at engendering certain feelings than others. As a specific example, he names the feelings of pride and guilt, which require “an indexical relation between the user and what is presented to them” [30], in other words, that the players feel responsible for the inspiring or the disgraceful signs they perceive, which is much easier to achieve in games than in non-interactive media.

In regards to the exact semiotic mechanism of instilling an emotion in players, Seraphine cites Douglas Anderson [2, pp. 55–57], who defined the goal of creative process as “making monadic concepts belonging to the firstness (such as emotions) intelligible through reasoning at the level of the thirdness” [31]. In the context of videogames, this means that a designer must create a system that uses interactions and other signs to guide its players to experience certain emotional states. The advantage of putting the aesthetics on a separate layer is that, as Seraphine puts it “starting with this framework, it would be possible to come up with a story and create the game dynamics according to the emotions that this story is supposed to provoke” [30].

As the next section will show, there exists at least one development company in the gaming industry that explicitly subscribes to exactly this principle of design, which makes their work a very suitable target for a case study of Seraphine’s theory.

## 5 Production background of *Journey*

*Journey* is a videogame released in 2012 for the PlayStation 3 console by the Los Angeles-based studio thatgamecompany as part of a three-game deal with the publisher Sony Computer Entertainment (the other two games were the 2006 *fLOW* and the 2009 *Flower*). It is an online game where players are randomly paired up with each other to journey through a colorful sequence of levels. According to its executive producer Robin Hunicke [16] – the same Robin Hunicke who co-created the MDA framework, – thatgamecompany’s goal had always been to create emotional games that change the public perception of the medium, and she believes that the main reason for *Journey*’s success was its redefinition of cooperative online multiplayer.

Creative director Jenova Chen [12] further explains that thatgamecompany’s design process is driven by the question of what emotions games as a medium can communicate to the players. When approaching a new game, the developers first choose a specific emotion and then build their gameplay around it, so that, in the words of the studio co-founder Kellee Santiago, “visuals, story, interaction itself all feed into the target emotion” [35]. It is not difficult to recognize this

as the approach that Frederic Seraphine advocates in his work, as well.

**Core aesthetics: Friendship and awe.** For *Journey* specifically, thatgamecompany had set out to create a “meaningful experience” that forged “a genuine connection between two people who never met, never spoke, on a console, without relying on traditional co-op mechanics, text messages or voice chat” [16]. The developers’ rejection of traditional multiplayer mechanics was rooted in the perception that “online players are mean”, which Chen [12] traced back to the dominant gameplay paradigms of online games that commonly focus on obtaining and exercising power over the game world.

Instead, Chen wanted players in *Journey* to pay attention to each other and to establish a raw social connection between two human beings. According to the designer Chris Bell, the trick to making a game about strangers becoming friends is to “get people to empathize before their prejudices allow them to draw lines between each other” [32]. To this end, player avatars in the game have no discernible gender or age, and have no practical means of textual communication, because as Bell puts it, “our medium is play, a language that reaches across cultures”. This drastic rejection of textuality in favor of what Seraphine [31] and Brown [7] later dubbed the “language of games” makes *Journey* a particularly interesting case to study.

In terms of Peircean semiotics, *friendship* – the type of social connection *Journey*’s developers wanted to facilitate – is a sentiment: a complex emotion consisting of a broad spectrum of natural and moral ones, such as interest, joy, trust, fear (of loss), and potentially grief. Instead of tackling these individually, however, thatgamecompany took a pragmatic shortcut: From personal and related experiences, Chen knew that social connections form more easily between people who had shared an unrelated powerful emotional experience, around which other, social emotions can spring up [12]. Upon evaluating their possibilities, the developers eventually concluded that the natural emotion best suited to catalyze feelings of friendship is *awe* and built the game’s external narrative around it.

**Soundtrack.** Chen describes his design process as starting with the soundtrack, because he considers music to be the most powerful tool to communicate emotion [12]. This position finds a justification in semiotics: Peirce wrote that “in some cases, [the emotional interpretant] is the only proper significante effect that the sign produces. Thus... a piece of concerted music is a sign. It conveys, and is intended to convey, the composer’s musical ideas; but these usually consist merely in a series of feelings” (cited in [4, p. 127]).

True to his word, Chen had the composer Austin Wintory begin working on the soundtrack before *Journey* even entered production. According to Wintory, the main theme of the game, “Nascence”, was composed during this period, inspired by the concept art produced by art director Matt Nava, and all later additions to the soundtrack had been variations thereof, because “*Journey* is only about one thing” [39]. Both Chen and Wintory commented on the positive feedback loop that occurred between game and sound designers, as changes in the score inspired changes in design and vice versa.

**Emotional axis.** Chen observes that most contemporary games focus on a very narrow band of the emotional spectrum, centering on accomplishment, achievement, and empowerment – what he identifies as “game fun” [12]. He attributes this both to the medium’s inherent superiority at conveying these emotions compared to non-interactive media, and to the games catering to the needs of their target audience – young men lacking power and control in their real life. To illustrate his point, he shows that these games are tightly clustered on the “emotional palette”

Valence	Chen [12]	Hunicke [16]
+	freedom, movement, energy, connection	trust, faith, together, power, safety
–	confinement, stillness, deprivation, loneliness	lonely, insecure, alone, small, weak

Table 5.1: The emotional spectrum of *Journey*, as identified by its creators.

[12, ca. 3:17]<sup>3</sup>, leaving large portions of it unexplored. Hunicke [16] explains that in *Journey*, they had consciously rejected this notion of “fun”, and instead picked two specific emotions that few online games had managed to communicate before (friendship and awe).

Having defined the overarching emotional goals, the developers set out to define a spectrum of specific emotions, spanning from negative to positive valence (see table 5.1). Hunicke’s notes [16, ca. 6:37] show that *Journey* is firmly rooted in her MDA framework, but also that her pragmatic definition of videogame aesthetics when working on the game was much more in line with that of Seraphine [31] than with that of her own MDA co-author LeBlanc [22]. Instead of broad terms like “sensation”, “narrative”, “fellowship”, and “discovery” (which are the core LeBlanc’s aesthetics found in *Journey*), she lists very specific, yet medium-independent feelings to define the particular emotional spectrum along which the player’s experience oscillates, keeping them engaged with the game and regulating its pacing.

## 5.1 External and internal narratives

The term *external conflict* is appropriated here from literary theory, where it refers to the events of the story visible to an outsider, as opposed to the *internal conflict*, which concerns the characters’ thoughts, feelings, and personal growth. The external conflict of *Journey* can be classified as *person vs. nature*, as it is driven by the player characters’ desire to brave “a vast land of sand and snow to reach the summit of the world, at which they will discover the history and truth buried in the sand” [12, ca. 43:21]. This promise of discovery falls under the cybertextual concept of *intrigue*, which Espen Aarseth appropriated from drama theory to denote “a secret plot in which the [player] is the innocent, but voluntary, target” [1, p. 122].

**The Hero’s Journey.** With the emotions of awe and mystery identified as key prerequisites for forming the connection between the players, thatgamecompany searched for a suitable narrative framework to facilitate an effective emotional engagement curve and ultimately, a cathartic experience for the player. There is no universally accepted definition of the term *catharsis*, but Chen defined it for their purposes as the emotional state created by a rapid and drastic change in emotional intensity or valence, regardless whether it is from negative to positive emotions (a happy ending) or vice versa (a tragic one) [12].

The developers had found such a framework in the *monomyth* or *the hero’s journey*, identified by Joseph Campbell [10] as the underlying structure of many myths and legends in cultures across the world. Interpreting the monomyth as a narrative of personal transformation, Chen had mapped its key stages onto both the popular three-act structure of film and the stages of human life, and assigned overall values of emotional intensity and valence to them. The resulting engagement arc (see table 5.2) had reportedly not been altered during the game’s entire production period [23], and maps perfectly onto the relative in-game altitudes of the

<sup>3</sup>This palette appears to be Chen’s own creation, although it shows significant similarities to the color-based “wheel of emotions” proposed by Robert Plutchik [26].

3A Structure	Monomyth	Stages of Life	Intensity	Level
Act I: Setup	Call to Adventure	Birth	-1	<i>opening</i>
Plot Point 1	Supernatural Aid	Exploring	0	Beginning
	The First Threshold		+1	Bridge
Act II: Confrontation	The Road of Trials	Focusing & Working	0	Desert
	Mother as Goddess		+2	Descent
	Woman as Temptress	Excelling	-2	Tunnels
	Atonement with Father		+4	Temple
	Apotheosis	Mastering	-4	Mountain
Plot Point 2	The Ultimate Boon	Transcending	+6	<i>cutscene</i>
Act III: Resolution	The Magic Flight	Life Calling	+4	Summit
	Freedom to Live	Re-generation	+2	<i>credits</i>

Table 5.2: The emotional arc of *Journey* (adapted from [12, ca. 43:21]).

respective levels. Said levels were then broken down into smaller *scenarios*, each with their own engagement curve facilitated by ludic and textonic elements, so that their cumulative effect matched the overall emotional rating of the level. The aforementioned moment of catharsis occurs at the “Plot Point 2”, when the emotional intensity changes from  $-4$  to  $+6$ .

As Portnow and Floyd [27] point out, many contemporary games implement the monomyth pattern in their narratives, however, *Journey*’s use of it is unusual in that its developers built it around the underlying emotional engagement curve it communicates, rather than simply recycling its symbolism.

**Internal narrative.** Unlike its external conflict, the internal conflict of *Journey* has not been explicitly articulated by its creators, but is easily construed from their design goals, as stated by Robin Hunicke in [16]. Since player characters in the game primarily serve as their players’ projections into its world, any diegetic internal struggle (*person vs. self*) they may experience is that of their players, and the specific internal “struggle” they feel is between the desire for companionship and the apprehension of strangers. Although the game’s narrative arc of two strangers’ transformation into friends is neither particularly extensive, nor very complex, thatgamecompany’s achievement lies not in the writing, but in creating an interactive system that reliably reproduces said arc between random online players.

## 5.2 Design by subtraction

Ed Smith [34] cites Jenova Chen saying “We build our games like a Japanese garden, where the design is perfect when you cannot remove anything else. I think that by doing that, the voice of your work is more coherent.” This approach is strikingly similar to *design by subtraction* championed by the Japanese videogame designer Fumito Ueda, whose game *Ico* (2001) Mark Brown [6] lists as a major influence on *Journey*. Consequently, Chen and his team approached the task of making the player focus on and care about the other player by systematically removing all “distractions” from the game.

**Game world distractions.** *Journey* is set against the backdrop of a vast desert, because “it provides a very abstract background, so you, the player, are the focus. If you were in a jungle, there would be too many details, distractions, diminishing the focus on the player” [23]. To counteract the perception of the game space being empty, mechanics of leaving sand-trails and



of *sand-surfing* were added to the game, letting players affect the environment and giving them more feedback on movement, respectively [12].

**Textual distractions.** As mentioned earlier, avoidance of textuality had been a major design goal in *Journey*, explaining the absence of any form of non-diegetic graphical user interface. This particularly concerns the online player matching subsystem, which Chen refers to as the *seamless lobby* [12], and which dynamically pairs up online players based on their proximity in the virtual world, without requiring them to understand specialized online multiplayer terms like “lobby”, “latency”, etc.

Player avatars in the game are almost indistinguishable visually, only identified by a randomly assigned glowing symbol on their chests. Online player handles are not displayed until after the ending credits, because they often contain aggressive textuality originating outside of the game’s “magical realm”, which breaks its context and immersion [12]. Textual and voice chat are excluded from the game for the same reason, as well as because, as designer Chris Bell points out, language barrier is one of major factors segregating online players [32].

With so much effort put by the developers into removing any form of textuality from the gameplay, it is interesting to observe that the players came up with ways to reintroduce it. In particular, leaving trails in the snow for the other player to read during the finale had become an online tradition, while more inventive players have reportedly managed to use Morse code to communicate with each other textually using the “chirping” mechanic (see below).

**Social distractions.** Originally, *Journey* was conceived as a four-player game, but the developers soon realized that this facilitated subgroup formation and ostracism, and reduced the number of players in any given session to two [12].

Robin Hunicke also describes how the cooperative puzzles designed early on for players to “bond together” over ended up feeling forced, prompting the developers to remove them, along with all complicated platforming elements, and to redefine *Journey* as a “co-op game that you can complete alone” [16]. This seeming contradiction offered players a meaningful choice of whether to engage with others or to travel alone. Smith [34] quotes Jenova Chen saying “we want to offer the player the choice between individualism and group conformity... We wanted to create an environment where the cooperation is not forced; you’re totally fine doing it yourself. If you choose to cooperate, then that is the real essence of connecting two players.”

Later, Chen described this approach as *co-liberation* [12], a balance between the self and the group, and named it as the other driving force behind the creation of the game’s seamless lobby, which allows a player to disconnect from their current companion and be matched with someone else by simply walking away from them in-game. From the perspective of Frederic Seraphine’s ludic framework, this represents one of the clearest examples of the game semiotically inferring a player’s intent from an intuitive ludic sign they have produced.

**Resource distractions.** As both Chen [12] and Hunicke [16] describe in detail, early prototypes of the game had collectible resources scattered across the game world that allowed player avatars to briefly glide through the air. Because these resources were finite, however, this encouraged unfriendly competition over them among players, so to curtail this, the flying energy was made obtainable without limit from contact with various “cloth” creatures (including other players’ avatars) forming an ecosystem within the game world. This design reinforces the players’ feelings of connectedness and friendship by encouraging them to seek proximity with other players, in what is likely the most effective use of *procedural rhetorics* in the game, defined by Ian Bogost as the “practice of using processes persuasively” [5].

**Physics distractions.** Early prototypes also included simulated physics that allowed players to move others' avatars within the game space, which encouraged many play-testers to deliberately push others into danger. Looking for the causes of this behavior, Jenova Chen consulted a psychologist, who helped him realize that players do not transfer their learned real life morals into the game, but instead, like newborns, seek to maximize the visible feedback to their actions [12]. This led to the removal of simulated physics and to the introduction of a mechanic rewarding players with energy for standing next to each other, which fulfilled their need for feedback and encouraged proximity to each other in the game space.

Sadly, Chen's profound realization regarding player motivations has not received much attention from other designers and scholars.

## 6 Semiotic analysis of *Journey*

In the previous section, we have seen the semiotic impact of some design decisions in *Journey*. We will now attempt to analyze select parts of the game and how they facilitate its core aesthetics from a semiotic point of view, using both Frederic Seraphine's ludic framework for analysis of mechanics and other elements of interactivity, and the methods of Peircean semiotics and cybertextual studies for non-interactive signs.

### 6.1 Character design

Visual character design falls within the domain of content (textonic) signs and is thus not part of the ludics. However, as one of the most visible semiotic elements within the overall experience, it warrants a closer examination, especially since in *Journey*, it is tightly interwoven with ludics to form a coherent semiotic whole.

**Journeyer.** The player character and protagonist of the game is a featureless figure in a red robe, whose design originated in Jenova Chen's 2006 thought experiment "Utopia", which sought to erase outward distinctions between online players and to make them focus on recognizing each other's commonality instead of their differences [12]. To this end, player avatars in both "Utopia" and *Journey* have no discernible gender or age, and even the option to customize their robe color had been removed during development [24]. Following their design goal of avoiding textuality, thatgamecompany also chose not to display the player's online handle over their avatar's head, like in many online games, – instead, the only unique identifying feature of each journeyer is the glowing symbol on their chest that is randomly assigned to them by the game and is also displayed over their head when they chirp.

While generally humanoid in appearance, the journeyer's body prominently features some human body parts and deliberately lacks others. Their "face" lacks any features except the eyes, and they have only one pair of limbs, the legs. This mirrors the gameplay, whose two primary mechanics are moving the virtual camera (looking) and traversing the landscape (walking). The journeyer's upper extremities were removed from the design by Matt Nava when it became clear they weren't used in the gameplay [24], and also because, as Jenova Chen explained, "if you have arms, you think about picking up some kind of weapon and hitting something" [34].

**Recognizing humanity.** Given the effort the developers put into erasing distinctions between players, a question arises whether they had unintentionally erased the distinction between player and non-player objects, as well. To test this hypothesis, the author of this study had two friends play *Journey* without prior knowledge that it was a multiplayer game. On both occasions,

neither test subject recognized other journeyers as being controlled by fellow human players, nor that they had been paired up with multiple distinct individuals throughout the game. More importantly, neither formed any notable attachment to their companions, perhaps indicating that while the game efficiently encourages the formation of social bonds, this encouragement is stipulated on the shared knowledge of the other journeyer’s humanity, which the game ironically fails to communicate.<sup>4</sup>

While admittedly non-representative, this experiment seems to point towards major gaps in the ludic framework. Beyond its obvious lack of critical language to accommodate multiplayer (for instance, is an interaction initiated by another player an *actum* or a *factum*?), the experiment raises questions regarding its fundamental view of games as communicating quasi-minds, e.g.: Are average players capable and mentally prepared to recognize, without prior knowledge, parts of the game as being controlled by another (quasi-)mind? Is explicit prior knowledge of this other mind’s humanity necessary to form a social bond with it and, by extension, to facilitate emotional impact of any kind? If a system capable of perfectly mimicking human player behavior in *Journey* (and thus passing a simplified Turing test [37]) existed, would human players bond with it the same way they did with fellow humans, with and without prior knowledge? These questions, however, leave the realm of game studies, and delve deeply into the philosophy and ethics of computational intelligence, which cannot be covered here in due depth.

## 6.2 Mechanics

In this section, we examine some of the mechanics, or repeatable ludic compounds, found in the game, particularly ones pertaining to traversal, communication, and achievement.

**Walking.** Spatial traversal is the primary core mechanic of *Journey*, to the point where the game can be polemically counted among the earliest *walking simulators* (despite predating this term). Because spatial traversal is so central to the game experience, the developers combined it with the secondary sand-surfing mechanic and a level design that features many sand dunes to facilitate the most ubiquitous build-and-release tension cycle of the game.

Since ascending any slope in *Journey* is much slower than walking on a flat plane, climbing a dune both invokes the feelings of confinement and deprivation, and builds up the players’ anticipation regarding what it obscures from their view. Players are then rewarded for reaching the top both with the reveal of the next part of the level and with the feelings of energy and movement, as well as pure sensory enjoyment, that accompany rapidly surfing down the other slope. Jenova Chen claims that “there is no mechanics here, really, just the feedback” [12] and coins the term *gameplay* (short for “graphics as gameplay”) for sand-surfing.

**Scarf.** Flight is a secondary traversal mechanic (under Sicart’s classification [33]) that allows players to propel their journeyers through the air over great distances by expending a limited flying energy resource. The primary semiotic element used to communicate this process is the scarf attached to the nape of the journeyer’s robe, which they obtain early in the game and which is clearly visible to the player during most of the gameplay.

The scarf itself is a *dicent symbol* standing for the journeyer’s pool of flying energy (an *argument*) by the virtue of gameplay convention, but the game relies on many simpler signs

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<sup>4</sup>When asked about what the game could do differently to help her recognize other player avatars as such, one of the test subjects suggested granting them more individuality, e.g. differently colored robes (a feature specifically removed by the developers). She also suspected that the game’s cover art, depicting a lone journeyer, created a strong false preconception in her mind that *Journey* was an offline single-player game.

to communicate said convention without text or numbers. For example, the length of the scarf stands *iconically* for the size of the energy pool or the maximum amount of flying energy the journeyer can store at once, and both are increased whenever the player finds one of 21 glowing symbols hidden throughout the game world. This, in turn, allows the scarf length to be interpreted as a *dicent indexial sinsign* for the player’s mastery of the game by other players: encountering another player online with a scarf longer than one’s own communicates that they know the game world better than oneself.

The scarf’s surface is split in two by a glowing perpendicular stripe: the part from the nape down to the stripe is covered in glowing embroidery (a *rhetic* representation of energy), while the rest of the scarf is rendered plain and monotone. Upon launching into the air (an *actum*), the player can observe the glowing stripe slide up and erase some of the embroidery (*tactum*); when it reaches their nape, they can no longer fly (*factum*) until recharged through contact with other cloth creatures (*tactum*). These ludic signs, as well as an *iconic* resemblance to a burning candle, communicate an *indexial* connection between the journeyer’s current level of flying energy and the position of the glowing stripe on their scarf, which, in turn, lets the players infer through abduction the rules governing the energy economy in the game.

It is interesting to observe that many *Journey* players (e.g. [3]) come to believe that the flying energy is actually stored within the scarf, rather than within the journeyer’s entire body or their robe, despite the lack of concrete evidence for either proposition. This, perhaps, illustrates the difference between Peirce’s notions of the dynamic and the final interpretant.

**Chirping.** Chirping<sup>5</sup> is a secondary mechanic that allows players to signal their journeyer’s presence to other players and to cloth creatures. When chirping, the journeyer emits a bird-like sound, while their identifying symbol appears briefly above their head, with a spherical bubble of light emanating from it. The basic *actum* of chirping functions as a *rhetic* proclamation of the self (semiotically equivalent to calling out “I!”), which, depending on the current in-game circumstances, can be interpreted as any number of *dicent* propositions, such as “I [am here]!”, “I [see you, too]!”, “I [am sorry a stone serpent attacked you]!”, and so on.

Robin Hunicke notes that the developers had originally planned to include an interactive “singing” system, but cut it after realizing it was too distracting [16]. Instead, the game systems simply ensure that each chirp is harmonic with the current background soundtrack, communicating via sound the affinity of the journeyers to the game world and thus reinforcing the player’s feeling of connection to it.

**Robes.** The journeyer’s robe is plain red during the initial playthrough of the game, but gains more golden embroidery along the hem every time they complete the game from start to finish. This embroidery is visible to other players, serving as a *dicent indexial legisign* that their companion had finished the game one or more times before.

Upon collecting all 21 glowing symbols hidden across the levels, the player gains the option to replace their normal red robe with a white “Elder” robe (term used by Chen [12]). In addition to serving as another sign of their experience to other players, the white robe adds a new mechanic, wherein an Elder’s flying energy gradually replenishes on its own as long as they stand on a solid ground. This *tactum argument* can be interpreted as another element underlining the game’s overarching theme of power coming from proximity to others: just as journeyers in red robes receive energy from contact with cloth creatures, an Elder also regains it from being in

<sup>5</sup>Hunicke refers to this mechanic as “singing” [16], Chen as “shouting” [12], and Wintory as “chirping” [39]. Since Wintory, alongside sound designer Steve Johnson, recorded the actual audio, his preferred term is used here.

immediate contact with the game world itself.

### 6.3 Level and narrative design

To examine how the level design of *Journey* facilitates the specific emotions and intensities targeted by the developers, the author of this study had completed multiple playthroughs of *Journey* and observed others play it, live and in online *Let's Play* videos.

**Methodology.** Because of the largely linear and carefully guided nature of *Journey*'s narratives, Robin Laws' method of narrative beat analysis [21] was used to decompose the levels "The Beginning", "The Tunnels", and "The Summit" (as well as select parts of "The Bridge" and "The Mountain") into their constituent "scenarios" [12]. These scenarios were then further broken down into the constituent semiotic units (signs), ranging in scope from the global parameters, like the apparent time of day and the colors of the sky and the sand, to individual shots of key scripted events, such as climbing the first dune of the game and obtaining the first piece of the scarf. Special attention was paid to emergent unprompted behavior displayed by different players, e.g. leaping off a tall structure immediately after gaining the ability to fly.

The individual beats and moments thus identified were then matched to the emotions they invoked in the author and in other players, which, in turn, were placed on the emotional spectrum of the game, as defined by the designers (see table 5.1), and subjectively graded in respect to their valence and intensity. The resulting data points were then aggregated over entire levels to compare them to the intended cumulative emotional values (table 5.2), as well as clustered by their main mode of communication in an attempt to isolate a possible "chief cause" of specific emotions the game instilled. Due to space restrictions, the complete analysis cannot be included in this study, therefore only the conclusions drawn from it will be presented below.

**Irreducibility of multimodality.** A conclusion that became increasingly apparent in the course of this analysis was that no individual part of the multimodal experience of playing a videogame can be examined in isolation, given how they continuously feed into and reinforce each other. Early in the game, for example, the idea of a connection between the journeyer and the cloth creatures is conveyed both by the latter actively seeking affectionate contact with the former (a *factum*), and the creatures' visual design having the same color palette and pattern as the journeyer's own robe (a graphic *rheme*).

It must furthermore be recognized that ludics are inseparable from graphical and acoustic signs through which they are mediated, as interactions between game objects occur within the quasi-mind of the game, but the players only perceive a series of graphical and audio renderings of them. Consequently, while the capacity to communicate through interactivity and computational behavior is a unique trait that sets videogames apart from other art forms (an argument made by Frasca [13], Bogost [5], Seraphine [31], and many others), it does not and cannot fully account for their expressiveness. Therefore, while the expressive power of the behavior-based "language of games" [7] can and should be explored, it would be severely restricted by neglecting other modes of videogame expression, including ones borrowed from traditional media.

thatgamecompany, while rejecting textual communication in *Journey*, had embraced the rest of the modal spectrum, as evident in the fact that the main emotional upturn of the external narrative, the moment of catharsis between "The Mountain" and "The Summit", occurs in a non-interactive, albeit ludically significant cutscene. The recovery of the scarf in it serves as an inspiring ludic sign (a *factum*, in fact) that, together with equally powerful cinematic, visual, and especially musical cues, facilitates the most uplifting moment in the game.

Another level, “The Tunnels”, facilitates a “fundamentally alien” [39] experience through a combination of blue-saturated visuals (contrasting the red- and yellow-dominated palette of the preceding levels), a deliberately eerie background music unlike any previously heard soundtrack, and unsettling ludic signs, such as the previously affectionate cloth creatures actively avoiding the journeyers (*factum*), with a possible enthymematic *argument* being that they have been scared by something further ahead in the level (specifically, by the stone serpents).

## 7 Conclusions

The present study had two main goals: to critically examine Frederic Seraphine’s ludic framework by applying its ideas to a particular videogame, and to examine *Journey* using methods of the formal study of meaning in an attempt to understand the concept of “meaningful play”.

**Ludic framework.** By applying the methods and concepts of formal semiotics to gameplay interactions, the ludic framework aims to analyze and to predict their cognitive and emotional impact on (human) players. A fusion of historically disparate fields, such as semiotics, game studies, and artificial intelligence, however, is bound to have blind spots that need to be addressed before it can mature into a practical toolset. One such deficiency that was particularly apparent in the study of *Journey* is a complete lack of a critical language for the semiotic analysis of interactions between human agents mediated by a virtual game world. Focusing on sign exchange between human and artificially intelligent gameplay agents, the framework does not offer any tools (nor justifies the lack thereof) for examining online multiplayer, which has become one of the key videogame features in the past decade.

Furthermore, while the framework acknowledges multimodality as inherent to videogames, its argument that gameplay interactions form their own intelligible language is weakened by the fact that all interaction signs are themselves mediated to the player by simpler non-interactive signs, like sounds and images, and the former therefore cannot be practically isolated from the latter for a controlled examination. Further research is needed to determine whether this language of games can be learned and deployed independently of the sign systems developed by and for traditional non-interactive media, or must be considered a specialized extension thereof.

Lastly, the framework, despite its already strong foundation in Peircean semiotics, needs more grounding in contemporary game studies on one hand, and in the mathematical study of computation intelligence and particularly of *computational semiotics* [14] on the other. Among game studies, Ian Bogost’s *procedural rhetorics* may be of particular interest to this research: while Bogost himself did not use the semiotic vocabulary, his work has been strongly linked to semiotics [8], and may therefore be the missing link between traditional semiotics and videogames.

**Meaningful play.** At the early stages of this study, the author’s hope was to use the methods of the formal study of *meaning*, semiotics, to better understand the concept of *meaningful* play. As it progressed, however, the linguistic fallacy of this reasoning became increasingly apparent: just like having a *color* does not make something *colorful*, simply conveying a meaning does not make it meaningful, either. Thanks to their interpretable nature, all videogames convey and process meaning, and semiotic methods are well-suited for analyzing these processes, but they cannot answer the question of why so few games are praised for being as meaningful as *Journey*.

To answer the question of what makes play meaningful, we are perhaps better served by the writings of Ian Bogost than by those of Charles Peirce. In his book *Persuasive Games* [5], Bogost professes his interest in games that use procedural rhetorics to affect change within the

players that reaches beyond gameplay into their daily lives. We may, therefore, consider an act of play *meaningful* when it makes some difference in what we as players feel, think, or believe outside of the temporal, spatial, and conceptual confines of play itself.

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